UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/511,563	10/15/2004	Hirokazu Kobayashi	MAT-8606US	4188

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EXAMINER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

PTOL-90A (Rev. 04/07)

	Application No.	Applicant(s)
Office Action Summary	10/511,563	KOBAYASHI ET AL.
	Examiner	Art Unit	
	Tri H. Phan	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 October 2004*.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle,* 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-21* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3,6-8,12-14 and 20* is/are rejected.

7)☒ Claim(s) *2,4,5,9-11,15-19 and 21* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☒ All b)☐ Some * c)☐ None of:

      1.☒ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

Response to Communication(s)

1.   This office action is in response to the Application filed on October 15th, 2004. Claims 1-21 are now pending in the application.

Priority

2.   Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Drawings

3.   In regard to the Preliminary Amendment filed on October 15th, 2004, the drawings are objected to because all blocks in Figures 1-2, 7, 11-12, 16-17, 19, 36, 41 should be labeled with descriptive legends based on 37 C.F.R. § 1.84(o) for supporting the objection in the Rules and M.P.E.P. (for example, in figure 1, elements 101 should labeled as "Mobile Communication Device"; element 102 should labeled as "Mobile Router"; elements 103 should labeled as "Connection Unit"; element 104 should labeled as "Network"; element 105 should labeled as "Mobile Communication System"; etc.). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

4.   Figures 41-41 should be designated by a legend such as -- Prior Art -- because only that which is old is illustrated (See Background Art, page 1-3). See MPEP § 608.02(g).

Specification

5.   The lengthy specification has not been checked to the extent necessary to determine the

presence of all possible minor errors. Applicant's cooperation is requested in correcting any

errors of which applicant may become aware in the specification.

Claim Objections

6.   Claim 12 is objected to because of the following informalities:

In claim 12, line 5, "selectsg" is a typographical error; it should be correct to -- selects --.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

7.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8.   Claims 1, 3, 6, 13-14 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable

over **Korpela, Mikko** (U.S.6,961,573; hereinafter refer as '**Korpela**') in view of **Noguchi et al.**

(U.S.7,075,908; hereinafter refer as '**Noguchi**').

- In regard to claim 1, **Korpela** discloses *a mobile communication device* ('mobile terminal 10' in fig. 1), *which comprises*

an interface recording section for recording a type of an external interface with an external network received from a mobile router relaying to the external network (for example see step 1222 in fig. 10; fig. 5, col. 5, lines 9-13; wherein memory, e.g. *"interface recording section"*, stores protocol code files for protocol types of different backbone networks, e.g. *"external interface type with an external network"*, downloaded from radio access networks, e.g. *"mobile router"*, as disclosed in col. 6, lines 29-65);

an interface decision section for selecting at least one or more of external interfaces adapted for the service type ('management program'; for example see col. 5, lines 21-38; col. 7, lines 39-47; wherein type of sessions and protocols are *"service type"* and *"external interfaces"* selected by the management control to setup/use); *and*

a transmission section for notifying first information of the external interface selected to a mobile router of within a same segment (for example see col. 6, line 66 through col. 7, line 5; col. 7, lines 53-58; wherein the terminal, e.g. *"transmission section"*, registers with the corresponding network using selected protocol, e.g. *"first information of the selected external interface"*).

Korpela does disclose the control device selects type of session or application, e.g. *"service type of communication to be handle"*, such as voice or data, to setup port with the corresponding network as specified in col. 3, line 66 through col. 4, line 3; col. 7, lines 40-58; but fails to explicitly disclose the *"service-type recording section"* for recording service types.

However, such limitation lacks thereof from **Korpela** reference is well known and disclosed by

Noguchi.

In an analogous art, **Noguchi** discloses the mobile device and method for switching

between wireless data communication networks (for example see fig. 1; col. 2, line 55 through

col. 3, line 8); which comprise switching program recording medium or table, e.g. *"service-type*

recording section", for managing application types or port numbers of corresponding application

traffics as disclosed in col. 15, lines 31-61; col. 16, lines 34-40.

Thus, it would have been obvious to those skilled in the art at the time of the invention

was made to incorporate switching program recording medium or table as taught by **Noguchi**'s

invention in place of **Korpela**'s memory part, with the motivation being to manage the

correspondence between application types or port numbers and identified application-specific

communication traffics for fast switching as disclosed in **Noguchi**: col. 3, lines 1-8.

- Regarding claim 3, **Korpela** further discloses, *wherein selecting a group of the external*

interfaces is from a plurality of external interfaces of within the mobile router (for example see

col. 7, lines 39-58; wherein type of protocols selected by the mobile terminal to setup session

with backbone networks are provided by radio access networks, e.g. *"selecting external*

interfaces of within the mobile router", via broadcast signal as disclosed in col. 6, lines 8-36).

- In regard to claim 6, **Korpela** further discloses, *wherein the service-type recording*

section records a significance of a parameter representative of a characteristic of the service

type, and the interface decision section decides an external interface on the basis of the

significance (for example see col. 7, lines 39-47; wherein selected type of session and protocol to use are chosen based on the cost and quality of service factors, e.g. *"significance of a parameter representative of a characteristic of the service type"*).

Korpela does disclose the control device selects type of session or application, e.g. *"service type of communication to be handle"*, such as voice or data, to setup port with the ¬corresponding network as specified in col. 3, line 66 through col. 4, line 3; col. 7, lines 40-58; but fails to explicitly disclose the *"service-type recording section"* for recording the selected service type and protocol to use based on the cost and quality of service factors. However, such limitation lacks thereof from **Korpela** reference is well known and disclosed by **Noguchi**.

In an analogous art, **Noguchi** discloses the mobile device and method for switching between wireless data communication networks (for example see fig. 1; col. 2, line 55 through col. 3, line 8); which comprise switching program recording medium or table, e.g. *"service-type recording section"*, for managing application types or port numbers of corresponding application traffics as disclosed in col. 15, lines 31-61; col. 16, lines 34-40.

Thus, it would have been obvious to those skilled in the art at the time of the invention was made to incorporate switching program recording medium or table as taught by **Noguchi**'s invention in place of **Korpela**'s memory part, with the motivation being to manage the correspondence between application types or port numbers and identified application-specific communication traffics for fast switching as disclosed in **Noguchi**: col. 3, lines 1-8.

- Regarding claim 13, **Korpela** discloses *a mobile router* ('radio access network station' in fig. 3) *comprises*

an interface-type recording section ('store 26' in figs. 3-4) *for recording external-interface-type information as interface information for connection with an external network* (for example see col. 4, lines 57-67; wherein store 26 stores respective protocols of corresponding backbone network);

connection decision section ('control device 25' in fig. 3) *for deciding whether or not to relay communication of from the mobile communication device, on the basis of the connection information* (for example see col. 5, line 63 through col. 6, line 14; where the control unit sets up appropriate protocol/session to connect with mobile terminal); and

a router transmission section ('RF 22' in fig. 3) *for multicasting the external-interface-type information and making a notification to the mobile communication device selected for decision of relaying* (for example see col. 4, lines 23-30; wherein the radio access network station broadcast the control signal to mobile terminals, i.e. "*multicasting the external-interface-type information*" as disclosed in col. 6, lines 15-28; and assigns appropriate channel to mobile terminal to set up/negotiate the communication, i.e. "*making a notification ... for decision of relaying*" as disclosed in col. 6, lines 8-14).

Korpela does disclose the set up/negotiate between radio access network and mobile terminal for selecting appropriate network, i.e. "*plurality of external interface types*" as disclosed in fig. 4; to communicate through the registration, i.e. "*receiving connection information for deciding an external interface for relaying with the external network*" (for example see col. 6, lines 8-14; col. 7, lines 53-58); but fails to explicitly disclose the "*connection-interface recording section*" for recording connection information. However, such limitation lacks thereof from **Korpela** reference is well known and disclosed by **Noguchi**.

In an analogous art, **Noguchi** discloses the base station and method for determining and recording the switching program through application proxy 40 (for example see fig. 3; col. 3, lines 1-8; col. 10, lines 19-29); wherein tables 45 and 46, i.e. "*connection-interface recording section*", store connection information of mobile terminal (for example see fig. 3; col. 10, lines 30-42).

Thus, it would have been obvious to those skilled in the art at the time of the invention was made to incorporate switching program recording medium or tables as taught by **Noguchi**'s invention in place of **Korpela**'s memory part, with the motivation being to manage the correspondence between application types or port numbers and identified application-specific communication traffics for fast switching as disclosed in **Noguchi**: col. 3, lines 1-8.

- In regard to claim 14, **Korpela** further discloses *wherein the connection information has a plurality of external interface types* (for example see fig. 4), *the connection decision section selecting one external interface from the external interface types* (for example see col. 6, lines 8-28; where the radio access network selects the appropriate protocol/network to connect with the mobile terminal).

- Regarding claim 20, **Korpela** discloses *a mobile communication system* (for example see fig. 1), *which comprises*

a mobile communication device ('mobile terminal 10' in fig. 1) *includes*

an interface recording section for recording a type of an external interface with an external network received from a mobile router relaying to the external network (for example see

step 1222 in fig. 10; fig. 5, col. 5, lines 9-13; wherein memory, e.g. *"interface recording section"*, stores protocol code files for protocol types of different backbone networks, e.g. *"external interface type with an external network"*, downloaded from radio access networks, e.g. *"mobile router"*, as disclosed in col. 6, lines 29-65);

an interface decision section for selecting at least one or more of external interfaces adapted for the service type ('management program'; for example see col. 5, lines 21-38; col. 7, lines 39-47; wherein type of sessions and protocols are *"service type"* and *"external interfaces"* selected by the management control to setup/use); and

a transmission section for notifying first information of the external interface selected to a mobile router of within a same segment (for example see col. 6, line 66 through col. 7, line 5; col. 7, lines 53-58; wherein the terminal, e.g. *"transmission section"*, registers with the corresponding network using selected protocol, e.g. *"first information of the selected external interface"*).

Korpela does disclose the control device selects type of session or application, e.g. *"service type of communication to be handle"*, such as voice or data, to setup port with the corresponding network as specified in col. 3, line 66 through col. 4, line 3; col. 7, lines 40-58; but fails to explicitly disclose the *"service-type recording section"* for recording service types. However, such limitation lacks thereof from **Korpela** reference is well known and disclosed by **Noguchi**.

In an analogous art, **Noguchi** discloses the mobile device and method for switching between wireless data communication networks (for example see fig. 1; col. 2, line 55 through col. 3, line 8); which comprise switching program recording medium or tables in application

proxy 30, e.g. *"service-type recording section"*, for managing application types or port numbers

of corresponding application traffics as disclosed in col. 15, lines 31-61; col. 16, lines 34-40;

and a mobile router ('radio access network station 20a-c' in fig. 1) *includes*

> *an interface-type recording section* ('store 26' in figs. 3-4) *for recording external-

interface-type information as interface information for connection with an external network (for

example see col. 4, lines 57-67; wherein store 26 stores respective protocols of corresponding

backbone network);

> *connection decision section* ('control device 25' in fig. 3) *for deciding whether or not to

*relay communication of from the mobile communication device, on the basis of the connection

information (for example see col. 5, line 63 through col. 6, line 14; where the control unit sets up

appropriate protocol/session to connect with mobile terminal); *and*

> *a router transmission section* ('RF 22' in fig. 3) *for multicasting the external-interface-

*type information and making a notification to the mobile communication device selected for

decision of relaying (for example see col. 4, lines 23-30; wherein the radio access network

station broadcast the control signal to mobile terminals, i.e. *"multicasting the external-interface-

type information" as disclosed in col. 6, lines 15-28; and assigns appropriate channel to mobile

terminal to set up/negotiate the communication, i.e. *"making a notification ... for decision of

relaying" as disclosed in col. 6, lines 8-14).

Korpela does disclose the set up/negotiate between radio access network and mobile

terminal for selecting appropriate network, i.e. *"plurality of external interface types"* as disclosed

in fig. 4; to communicate through the registration, i.e. *"receiving connection information for

deciding an external interface for relaying with the external network" (for example see col. 6,

lines 8-14; col. 7, lines 53-58); but fails to explicitly disclose the "*connection-interface recording*

section" for recording connection information. However, such limitation lacks thereof from

Korpela reference is well known and disclosed by **Noguchi**.

In an analogous art, **Noguchi** discloses the base station and method for determining and

recording the switching program (for example see fig. 3; col. 3, lines 1-8; col. 10, lines 19-29);

wherein tables 45 and 46 in the application proxy 40, i.e. "*connection-interface recording*

section", store connection information of mobile terminal (for example see fig. 3; col. 10, lines

30-42).

Thus, it would have been obvious to those skilled in the art at the time of the invention

was made to incorporate switching program recording medium or tables in application proxies

30 and 40 in mobile terminal and radio access network station as taught by **Noguchi**'s invention

in place of memory and store in **Korpela**'s mobile terminal and radio access network station,

with the motivation being to manage the correspondence between application types or port

numbers and identified application-specific communication traffics for fast switching as

disclosed in **Noguchi**: col. 3, lines 1-8.

9.   Claims 7-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Korpela,**

Mikko (U.S.6,961,573) in view of **Noguchi et al.** (U.S.7,075,908), and further in view of

Vazvan et al. (WO 96/28947; hereinafter refer as 'Vazvan').

- In regard to claims 7-8, the combination of **Korpela** and **Noguchi** does disclose the terminal control device selects the type of session, i.e. the application or *"service type"*, and selects the best available protocol, i.e. *"external interface"*, to use based on the cost and quality of service factors (for example see col. 7, lines 39-47); but fails to explicitly disclose about the *"function for user to change"* the at least one of service type and significance.

In an analogous art, **Vazvan** discloses a mobile system including PQ selection, which provides to mobile user for selecting/changing connection services, i.e. *"function for user to change"*, based on price and quality criteria or parameters (for example see page 8, line 1 through page 10, line 16) and wherein the information about service prices and capacity is sent to mobile terminal for selecting, i.e. *"function to record the significance by downloading from the external network"*, (for example see page 9, lines 7-34; page 15, line 35 through page 16, line 9; wherein, it is obvious that information has to be stored for mobile user to compare/select).

Thus, it would have been obvious to those skilled in the art at the time of the invention was made to incorporate the use of PQ selection as taught by **Vazvan**'s invention into the combination of **Noguchi** and **Korpela**'s terminal control device, with the motivation being to provide to mobile user as extended choices for changing service connections based on cost and quality of service factors as disclosed in **Korpela**: col. 7, lines 39-47.

10.   Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Korpela, Mikko** (U.S.6,961,573) in view of **Noguchi et al.** (U.S.7,075,908), and further in view of **Streter, Cory W.** (U.S.6,456,858; hereinafter refer as 'Streter').

- In regard to claim 12, the combination of **Korpela** and **Noguchi** does disclose the terminal control device selects the protocol and network type, i.e. *"external interface"*, to use ·based on the cost and quality of service factors (for example see fig. 9; col. 6, lines 29-36; col. 7, lines 39-47) in a predetermined time interval (for example see col. 9, lines 43-46, 59-60); but fails to explicitly disclose about the *"a collection timer managing section"* for managing a period to receive the external interface type from the mobile router.

In an analogous art, **Strerer** discloses a dual-mode wireless telephone with the scanning interval process, i.e. *"collection timer managing section"*, to select appropriate protocol to access with base station at the end of rescan interval through the control command, i.e. *"notification of elapse of a predetermined time from the collection timer managing section"* (for example see col. 12, lines 38-65).

Thus, it would have been obvious to those skilled in the art at the time of the invention was made to incorporate the use of scanning interval process as taught by **Streter**'s invention into the combination of **Korpela** and **Noguchi**'s terminal control device, with the motivation being to minimize the telephone's delayed and dropped call during access as disclosed in **Streter**: col. 12, line 58 through col. 13, line 13.

Allowable Subject Matter

11.   Claims 2, 4-5, 9-11, 15-19 and 21 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

12.   The prior art made of record and not relied upon is considered pertinent to applicant's

disclosure.

Moon et al. (U.S.6,961,573) and **Dantu et al.** (U.S.7,068,624) are all cited to show

devices and methods for routing process in wireless communication network based on link

quality, which are considered pertinent to the claimed invention.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Tri H. Phan, whose telephone number is (571) 272-3074. The

examiner can normally be reached on M-F (8:00-4:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Chi H. Pham can be reached on (571) 272-3179.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
Washington, D.C. 20231

or faxed to:

(571) 273-8300

Hand-delivered responses should be brought to Randolph Building, 401 Dulany Street,

Alexandria, VA 22314.

Any inquiry of a general nature or relating to the status of this application or proceeding

should be directed to the Technology Center 2600 Customer Service Office, whose telephone

number is (571) 272-2600.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Tri H. Phan/
December 26, 2007